**CLAIMS**:

1. A semiconductor processing method, comprising:

forming a conductive copper-containing material over a semiconductive substrate;

forming a second material proximate the conductive material; and

forming a barrier layer between the conductive material and the second material, the barrier layer comprising a compound having silicon chemically bonded to both nitrogen and an organic material.

2. The method of claim 1 wherein conductive material consists essentially of copper.

3. The method of claim 1 wherein the barrier layer is against the conductive material.

4. The method of claim 1 wherein the barrier layer is against both the conductive material and the second material.

5. The method of claim 1 wherein the second material is an insulative material.

6. The method of claim 1 wherein the second material comprises silicon dioxide.

7. The method of claim 1 wherein the organic material comprises a methyl group.

8. The method of claim 1 wherein the organic material is a methyl group.

9. The method of claim 1 wherein the nitrogen that is bonded to the silicon is not bonded to carbon.

10. The method of claim 1 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$, with x being greater than 0 and no greater than 4.

11. The method of claim 1 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the barrier layer consists essentially of $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater than 4, and wherein y is greater than 0 and no greater than about 4.

12. The method of claim 1 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the barrier layer consists essentially of $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater than 4, wherein y is greater than 0 and no greater than about 4, and wherein the $(CH_3)_xSi_3N_{(4-x)}$ is present in the barrier layer to a concentration of from greater than 0% to about 20% (mole percent).

13. The method of claim 1 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$, and wherein the forming occurs in a reaction chamber and comprises combining $CH_3SiH_3$ and $NH_3$ in the chamber to deposit the $(CH_3)_xSi_3N_{(4-x)}$ over the substrate, wherein x is greater than 0 and no greater than about 4.

14. The method of claim 1 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$, and wherein the forming occurs in a reaction chamber and comprises combining $CH_3SiH_3$ and $NH_3$ in the chamber with a plasma to deposit the $(CH_3)_xSi_3N_{(4-x)}$ over the substrate, wherein x is greater than 0 and no greater than about 4.

15. The method of claim 1 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the barrier layer consists essentially of $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, and wherein the forming occurs in a reaction chamber and comprises combining $CH_3SiH_3$, $SiH_4$ and $NH_3$ in the chamber with a plasma to deposit the $(CH_3)_xSi_3N_{(4-x)}$ over the substrate, wherein x is greater than 0 and no greater than about 4, and wherein y is greater than 0 and no greater than about 4.

16. A semiconductor processing method, comprising:

providing a semiconductive substrate;

forming a first material over the semiconductive substrate;

forming a barrier layer proximate the first material, the barrier layer comprising a compound having silicon chemically bonded to both nitrogen and an organic material; and

forming a second material separated from the first material by the barrier layer.

17. The method of claim 16 wherein the barrier layer is formed against the first material.

18. The method of claim 16 wherein the barrier layer is formed against the first material, and wherein the second material is formed against the barrier layer.

19. The method of claim 16 wherein at least one of the first and second materials is conductive.

20. The method of claim 16 wherein at least one of the first and second materials is insulative.

21. The method of claim 16 wherein the nitrogen that is bonded to the silicon is not bonded to carbon.

22. The method of claim 16 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$, with x being greater than 0 and no greater than about 4.

23. The method of claim 16 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the barrier layer consists essentially of $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater than about 4, and wherein y is greater than 0 and no greater than about 4.

1 24. A semiconductor processing method, comprising:

2 providing a semiconductive substrate; and

3 forming a layer over the semiconductive substrate, the layer
4 comprising a compound having silicon chemically bonded to both
5 nitrogen and an organic material.

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7 25. The method of claim 24 wherein the organic material
8 comprises a methyl group.

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10 26. The method of claim 24 wherein the organic material is a
11 methyl group.

12

13 27. The method of claim 24 wherein the nitrogen that is bonded
14 to the silicon is not bonded to carbon.

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16 28. The method of claim 24 wherein the compound consists
17 essentially of $(CH_3)_xSi_3N_{(4-x)}$, with x being greater than 0 and no greater
18 than about 4.

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20 29. The method of claim 24 wherein the compound consists
21 essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the layer consists essentially of $Si_3N_y$
22 and the $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater than
23 about 4, and wherein y is greater than 0 and no greater than about 4.

1 30. The method of claim 24 wherein the compound consists
2 essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the layer consists essentially of $Si_3N_y$
3 and the $(CH_3)_xSi_3N_{(4-x)}$, and wherein the $(CH_3)_xSi_3N_{(4-x)}$ is present in the
4 layer to a concentration of from greater than 0% to about 20% (mole
5 percent), wherein x is greater than 0 and no greater than about 4, and
6 wherein y is greater than 0 and no greater than about 4.
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8 31. The method of claim 24 wherein the compound consists
9 essentially of $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater
10 than about 4, and wherein the forming occurs in a reaction chamber
11 and comprises combining $CH_3SiH_3$ and $NH_3$ in the chamber to deposit
12 the $(CH_3)_xSi_3N_{(4-x)}$ over the substrate.
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14 32. The method of claim 24 wherein the compound consists
15 essentially of $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater
16 than about 4, and wherein the forming occurs in a reaction chamber
17 and comprises combining $CH_3SiH_3$ and $NH_3$ in the chamber with a
18 plasma to deposit the $(CH_3)_xSi_3N_{(4-x)}$ over the substrate.
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33. The method of claim 24 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the layer consists essentially of $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater than about 4, and wherein the forming occurs in a reaction chamber and comprises combining $CH_3SiH_3$, $SiH_4$ and $NH_3$ in the chamber with a plasma to deposit the $(CH_3)_xSi_3N_{(4-x)}$ over the substrate.

34. A composition of matter comprising silicon chemically bonded to both nitrogen and carbon, and wherein the nitrogen is not bonded to carbon.

35. The composition of claim 34 wherein the carbon is part of a hydrocarbon.

36. A composition of matter comprising silicon chemically bonded to both nitrogen and an organic material, and wherein the nitrogen is not bonded to carbon.

37. The composition of claim 36 wherein the silicon is bonded to a carbon of the organic material.

38. The composition of claim 36 wherein the organic material comprises a methyl group.

1 39. The composition of claim 36 wherein the organic material
2 is a methyl group.
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4 40. The composition of claim 36 wherein the organic material
5 is a hydrocarbon.
6
7 41. The composition of claim 36 wherein the silicon, nitrogen
8 and organic material together comprise $(CH_3)_xSi_3N_{(4-x)}$, with x being
9 greater than 0 and no greater than about 4.
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11 42. A semiconductor device, comprising:
12 a semiconductive substrate; and
13 a layer over the semiconductive substrate, the layer comprising a
14 compound having silicon chemically bonded to both nitrogen and an
15 organic material.
16
17 43. The device of claim 42 wherein the nitrogen is not bonded
18 to carbon.
19
20 44. The device of claim 42 wherein the organic material
21 comprises a methyl group.
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45. The device of claim 42 wherein the organic material is a methyl group.

46. The device of claim 42 wherein the organic material is a hydrocarbon.

47. The device of claim 42 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$, with x being greater than 0 and no greater than about 4.

48. The device of claim 42 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the layer consists essentially of $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater than about 4, and wherein y is greater than 0 and no greater than about 4.

49. The device of claim 42 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the layer consists essentially of $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, wherein the $(CH_3)_xSi_3N_{(4-x)}$ is present in the layer to a concentration of from greater than 0% to about 50% (mole percent), wherein x is greater than 0 and no greater than about 4, and wherein y is no greater than about 4.

50. A semiconductor device, comprising:

a semiconductive substrate;

a first material over the semiconductive substrate;

a second material proximate the first material; and

a barrier layer separating the second material from the first material, the barrier layer comprising a compound having silicon chemically bonded to both nitrogen and an organic material.

51. The device of claim 50 wherein at least one of the first and second materials is conductive.

52. The device of claim 50 wherein the nitrogen is not bonded to carbon.

53. The device of claim 50 wherein at least one of the first and second materials is insulative.

54. The device of claim 50 wherein the compound consists essentially of $(CH_3)_xSi_3N_{(4-x)}$, with x being greater than 0 and no greater than about 4.

1 55. The device of claim 50 wherein the compound consists
2 essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the barrier layer consists essentially of
3 $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater
4 than about 4, and wherein y is no greater than about 4.
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6 56. A semiconductor device, comprising:
7 a semiconductive substrate;
8 a conductive copper-containing material over the semiconductive
9 substrate;
10 a second material proximate the conductive material; and
11 a barrier layer between the conductive material and the second
12 material, the barrier layer comprising a compound having silicon
13 chemically bonded to both nitrogen and an organic material.
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15 57. The device of claim 56 wherein the barrier layer is against
16 the conductive material.
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18 58. The device of claim 56 wherein the nitrogen is not bonded
19 to carbon.
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21 59. The device of claim 56 wherein the barrier layer is against
22 both the conductive material and the second material.
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1 60. The device of claim 56 wherein the second material is an
2 insulative material.
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4 61. The device of claim 56 wherein the second material
5 comprises silicon dioxide.
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7 62. The device of claim 56 wherein the organic material
8 comprises a methyl group.
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10 63. The device of claim 56 wherein the organic material is a
11 methyl group.
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13 64. The device of claim 56 wherein the compound consists
14 essentially of $(CH_3)_xSi_3N_{(4-x)}$, with x being greater than 0 and no greater
15 than about 4.
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17 65. The device of claim 56 wherein the compound consists
18 essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the barrier layer consists essentially of
19 $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, wherein x is greater than 0 and no greater
20 than about 4, and wherein y is no greater than about 4.
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1 66. The device of claim 56 wherein the compound consists
2 essentially of $(CH_3)_xSi_3N_{(4-x)}$ and the barrier layer consists essentially of
3 $Si_3N_y$ and the $(CH_3)_xSi_3N_{(4-x)}$, wherein the $(CH_3)_xSi_3N_{(4-x)}$ is present in
4 the layer to a concentration of from greater than 0% to about 50%
5 (mole percent), wherein x is greater than 0 and no greater than
6 about 4, and wherein y is no greater than about 4.

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